APPLICATION FOR EXTENSION OF ESCC QUALIFICATION APPROVAL

Component Title: Capacitors, Ceramic, Chip, Type I, sizes 0402 to 2220

Executive Member: CNES Date: 31/03/2020

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Appl. No. **323C**

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Components (including series and families) submitted for Extension of Qualification Approval:

ESCC COMPONENT NO.	VARIANTS	RANGE OF COMPONENTS	BASED ON	TEST VEHICLE / S	COMPONENT SIMILAR
3009/003 3009/004 - 3009/005	06 06 - 06	All values 16V to 100V	CEC2 02S CEC4 02S - CEC6 02S	- 300900406C1501JE 300900406-1502JX 300900506-1002JA	See box 14 for qualified ranges.
3009/006 3009/022 3009/037	06 06 06	All values 16V to 100V	CEC7 02S CEC12 02S CEC14 02S	300900606C3302JC - 300903706-6800JA	
3009/040	01 to 06	All values 16V to 100V	CEC2 04S to CEC14 04S	300904002-2701JX 300904004C8201JC 300904001-1001JX	See comment in box 14
3009/042 3009/040	06 13	All values 10V to 50V	CEC19 02S CEC19 04S	300904206-10C0KC 300904206-82C0KC	Lots manufactured for validation of 50V range

2 Component Manufacturer

EXXELIA SAS

3 Location of Manufacturing Plant(s)

EXXELIA
1, rue des Temps Modernes
77600 CHANTELOUP EN BRIE
FRANCE

4 Date of original qualification approval:

Date: 24/10/2012

Certificate Ref No. 323

5 ESCC Specifications used for Maintenance of qualification testing:

Generic: 3009 Issue: 4

Detail(s):		
3009/004	Issue:	6
3009/005		6
3009/006		6
3009/037		3
3009/040		4
3009/042		3

6 Deviations to LVT testing and Detail Specification used:

No ☒ Yes ☐ (supply details in Box 15)

Deviation from current Specifications:

No ☐ Yes ☒ (Supply details)

7 Qualification Extension Report reference and date:

Reports 17/0679 & 19/1104 – CEC7 02S 33nF, 50V
Reports 17/0603 & 19/1106 – CEC4 02S 1,5nF, 100V
Reports 17/0626 & 19/1107 – CEC4 04S 8.2nF, 50V
Reports 18/0133 & 19/1108 – CEC4 02S 15nF, 16V
Reports 18/0148 & 19/1109 – CEC2 04S 2.7nF 16V
Reports 18/0511 & 19/1105 – CEC6 02S 10nF 25V
Reports 18/0682 & 19/1111 – CEC14 04S 1nF 16V
Reports 18/1561 & 19/1110 – CEC14 02S 680pF 25V
Report 18/1364-A – CEC19 02S 10pF 50V
Report 19/1276 – CEC19 02S 82pF 50V

8 Summary of procurement or equivalent test results during current validity period in support of this application (those to ESCC listed first)

Project Name	Testing Level	LAT	Date code	Quantity Delivered
Thales Alenia Space AIRBUS DS TESAT CHARCROFT Elec. …	-	-	Lots delivered in 2017 / 2018 / 2019	Total 63 900 parts (83% 0603, 6% 0805, 3% 1210)
		-		

9 **PID** changes since start of qualification

None ☐

Minor* ☐

Major* ☒ *Provide details in box: 19

10 Current **PID** Verified by: CNES

Name of Agency Representative

Ref No: PID 623.03.390

Issue: Rev J Date: 18/10/2018

Rev Date: 18/09/2018

11 Current Manufacturing facilities surveyed by: **CNES** on **28/11/2018**

(Name of Agency Representative) (Date)

Satisfactory: Yes ☒ No ☐ Explain New DL1 Line

Report Reference: See MoM CNES/DSO/AQ/CQ-2018.0022700, December 2018

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Failure Analysis, DPA, NCCS available: Yes ☒ No ☐ (Supply data)

Ref. No's and purposes: NCCS 1CETE801, Handling problem on small size ceramic chip (Closed and appended)
NCCS 1CETE902, Delay in implementing maintenance testing and issuing maintenance reports (Closed and appended)

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The undersigned hereby certifies on behalf of the ESCC Executive - that the above information is correct; - that the appropriate documentation has been evaluated; - that full compliance to all ESCC requirements is evidence (except as stated in box 15;) - that the reports and data are available at the ESCC Executive and therefore applies on behalf of CNES as the responsible Executive Member for ESCC qualification status to be extended to the component(s) listed herein.

Date: 31/03/2020

JP. BUSSENOT
(Signature of the Executive Coordinator)

Continuation of Boxes above:

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Box 1, Range of Components :

Style	Detail Spec.	Model	Variants	Capacitance Range (pF)	Rated Volt. (V)	Tolerance (pF, ±%)
0805	**3009/003** **3009/040**	**CEC2 02S** **CEC2 04S**	**06** **02**	**1 to 2 700** **1 to 2 200** **1 to 1 800** **1 to 1 200**	**16** **25** **50** **100**	**< 10pF** **0,25 – 0,5 – 1 (pF)** **≥ 10pF** **1, 2, 5, 10 (%)**
1210	**3009/004** **3009/040**	**CEC4 02S** **CEC4 04S**	**06** **04**	**10 to 15 000** **10 to 12 000** **10 to 12 000** **10 to 6 800**	**16** **25** **50** **100**	
1812	**3009/005** **3009/040**	**CEC6 02S** **CEC6 04S**	**06** **05**	**100 to 33 000** **100 to 27 000** **100 to 22 000** **100 to 12 000**	**16** **25** **50** **100**	
2220	**3009/006** **3009/040**	**CEC7 02S** **CEC7 04S**	**06** **06**	**470 to 68 000** **470 to 56 000** **470 to 47 000** **470 to 27 000**	**16** **25** **50** **100**	
1206	**3009/022** **3009/040**	**CEC12 02S** **CEC12 04S**	**06** **03**	**1 to 6 800** **1 to 5 600** **1 to 5 600** **1 to 3 900**	**16** **25** **50** **100**	
0603	**3009/037** **3009/040**	**CEC14 02S** **CEC14 04S**	**06** **01**	**1 to 1 000** **1 to 680** **1 to 560** **1 to 330**	**16** **25** **50** **100**	
0402	**3009/042** **3009/040**	**CEC19 02S** **CEC19 04S**	**06** **13**	**1 to 330** **1 to 120** **1 to 100** **1 to 82**	**10** **16** **25** **50**	

In Blue, addition of 0405 50V range and correction of errors as per PID indice F implemented in 2015.

Box 7. Qualification Extension Report

EXXELIA reports 18/1364 dated October 2018 (supplemented with rev A dated July 2019) and 19/1276 dated August 2019 are part of the qualification of 50V 0402 (CEC19) range, testing performed on parts manufactured in the DL1 line.

EXXELIA reports 18/365 (CEC2 02S 1.8nF 50V, Lot V1804L004) and 18/366 (CEC7 02S 27nF 100V, Lot V1804L001) dated October 2018 which form part of the qualification programme performed on the DL1 production line in 2018 to validate manufacturing of medium valtage ranges 50V and 100V on this line where exploited in December 2018 to introduce DL1 as an alternative to DL17 line and are not reused herein.

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Non compliance to ESCC requirements:

No.:	Specification	Paragraph	Non compliance

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Additional tasks required to achieve full compliance for ESCC qualification or rationale for acceptability of noncompliance:

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Executive Manager Disposition

Application Approval: Yes ☒ No ☐

Action / Remarks:

Date:

Digitally signed by Britta Schade
Date: 2020.04.28 09:44:47 +02'00'

B. Schade: Head of ESA Product Assurance and Safety Department

ANNEX 1: LIST OF TESTS DONE TO SUPPORT EXTENSION OF QUALIFICATION 18

Tests conducted in compliance with:

- ESCC 3009 generic specification; Chart V (for ESCC/QPL parts);
- Or PID-TFD [illegible] (for ESCC/QML parts)

Tests vehicle identification/description:

300904002-2701JX DC 1804 300900506-1002JA DC 1812	300904001-1001JX DC 1817 300903706-6800JA DC 1845	
300900406C1501JE DC 1721 300904004C8201JC DC 1721	300900606C3302JC DC 1723 300900406-1502JX DC 1803	**300904206-10C0KC Lot V1806L008** **300904206-82C0KC Lot V1904L001**

Detail Specification reference: 3009/004/005/006/037/040/042

Chart F4	Test	Tick when done	Conditions	Date Code	Tested Qty	No. of Rejects	Comments if not performed. Comments on Rejection
Environmental / Mechanical Subgroup	Mounting	☒	IEC 60384-1, 4.33	**1723** **1721** **1803** **1804** **1817** **1845** **V1806L008** **V1904L001**	**20** **20** **20** **20** **20** **20** **19 (*)** **20**	**0**	**(*) One missing part**
	Rapid Change of Temperature	☒	IEC 60068-2-14	**1723** **1721** **1803** **1804** **1817** **1845** **V1806L008** **V1904L001**	**20** **20** **20** **20** **20** **20** **19** **20**	**0**	
	Steady State Humidity	☒	ESCC 3009, Para. 8.2	**1723** **1721** **1803** **1804** **1817** **1845** **V1806L008** **V1904L001**	**20** **20** **20** **20** **20** **20** **19** **20**	**0**	
	Visual Inspection	☒	ESCC 3009, Para. 8.5	**1723** **1721** **1803** **1804** **1817** **1845** **V1806L008** **V1904L001**	**20** **20** **20** **20** **20** **20** **19** **20**	**0**	
Endurance Subgroup	Mounting	☒	IEC 60384-1, 4.33	**1723** **1721** **1803** **1804** **1812** **1817** **1845** **V1806L008** **V1904L001**	**10** **10 + 10** **10** **10** **10** **10** **20** **11 + 11** **11 + 12**	**0**	
	Operating Life	☒	ESCC 3009, Para. 8.9	**1723** **1721** **1803** **1804** **1812** **1817** **1845** **V1806L008** **V1904L001**	**10** **10 + 10** **10** **10** **10** **10** **20** **11 + 11** **11+ 12**	**0**	**1 000H** **id** **id** **id** **id** **id** **id** **2 000H (2Un) + 2 000H (4Un)** **2 000H (2Un) + 2 000H (4Un)**

Electrical Subgroup	Mounting	☒	IEC 60384-1, 4.33	**1723** **1721** **1803** **1804** **1817** **1845** **V1806L008** **V1904L001**	**3** **3 + 3** **3** **3** **3** **6** **3** **3**	0	
	Capacitance-Temperature Characteristics	☒	ESCC 3009, Para. 8.10	**1723** **1721** **1803** **1804** **1817** **1845** **V1806L008** **V1904L001**	**3** **3 + 3** **3** **3** **3** **6** **0(**)** **6**	**0**	**Done prior to mounting.** **(**) Not applicable when C lower than or equal to 20pF**
	Robustness of Terminations	☒	ESCC 3009, Para. 8.7	**1723** **1721** **1803** **1804** **1817** **V1806L008** **V1904L001**	**3** **3 + 3** **3** **3** **3** **3** **3**	**0**	
Ass. / Capab. Subgroup	Solderability	☒	IEC 60068-2-58	**1723** **1721** **1803** **1804** **1817** **V1806L008** **V1904L001**	**3** **3 + 3** **3** **3** **3** **3** **3**	**0**	
	Permanence of Marking	☐	ESCC 24800				**NA**

NOTES ON THE COMPLETION OF THE APPLICATION FORM FOR ESCC QUALIFICATION EXTENSION APPROVAL

ENTRIES

Form heading	shall indicate: - the title of the component as given in its detail specification or the name of the series, family; - the Executive Member; - the entering date; - the certificate number and its sequential suffix.
Box 1	shall provide details given in the table; in particular there shall be listed: - the variants or range of variants; - the range of components (the ESCC code is recommended to indicate the values or values range, the tolerance, the voltage, etc); the designation given in the detail specification as 'base on'; - under Test Vehicle enter either an ESCC code or the specific characteristic capable of identifying the component tested (e.g., voltage of coil for a relay); - under component similar enter a cross if relevant.
Box 2; 3 and 4	As per QPL entry; otherwise, an explanation of the changes must be supplied.
Box 5	Will show the ESCC Generic and Detail specifications, including issue number and revision letter, current at the time the tests reported were performed. If the specifications are different from those current on the date of the application, see Box 6.
Box 6	Will show the deviations from the Generic and Detail Specifications listed in Box 5, in particular deviations from testing. In case of deviations this must be listed in Box 15. In case the referenced specification in Box 5 have currently a different issue and/or revision indicate also whether the test data deviates or not from such current documents.
Box 7	Must reference the report(s) supplied in support of the application.
Box 8	Should provide the details of procurement to the full ESCC System, documentation of all of which should already have been delivered to the ESCC Executive under the terms of the relevant Generic Specification. An appropriate table has been drawn in this box.
Box 9	If the PID evolved after the Original Qualification or after the last Extension of Qualification, adequate details of such evolution shall be provided together with the reasons for the changes. Major changes shall be clearly marked.
Box 10	Identify the current PID issue status, date and actual date of verification. The date of verification of the current PID should be arranged as close as possible to the required date of extension.
Box 11	This box can be completed only after a physical visit to the plant to confirm that no unexplained changes occurred and that the practices, procedures, material, etc. used in manufacturing the components are as described in the PID. This survey shall be carried out in accordance with the requirements of ESCC Basic Specification No. 20200 and its findings shall be recorded.
Box 12	Provide details of, or reference to, any Destructive Physical Analysis (DPA) and Failure Analysis reports as well as any Nonconformance(s) (NCCS) occurred during the qualification validity period, stating if established corrective action have produced satisfactory results.
Box 13	Enter only the name of the Executive Member (i.e., CNES, DLR, ESTEC, etc.) and the signature of the responsible Executive Coordinator.
Box 14	To be used when there is a need to expand any of the boxes from 1 through 12. Identify box affected and reference the Box 14 in the relevant Box. Box 14 can be broken into 14a, 14b, etc. if several boxes have to be expanded.
Box 15	Fill in Table as requested.
Box 16	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 17	All Executive Manager recommendations on the application itself, special conditions or restrictions, modifications of the QPL or QML entry, letters to the manufacturer, etc. shall be entered clearly in Box 19, signed by the representative for ESA, and dated.
Box 18	Fill in Table as requested.
Box 19	Confidential Details of PID changes including those of a confidential nature, shall be provided.
Box 20	State noncompliance with reference to specification(s) and paragraph(s). To simplify reference in Box 16 each nonconformance shall be sequentially numbered. If relevant state 'None'.
Box 21	Any additional action deemed necessary by the Executive Member to bring the submitted data to a standard likely to be accepted by the ESCC Executive should be listed herein or the reason(s) to accept the noncompliance.
Box 22	Additional Comments.